

SEQUENCE LISTING

<110> REGENTS OF THE UNIVERSITY OF CALIFORNIA

<120> COMPOSITIONS AND METHODS FOR GROWTH OF EMBRYONIC STEM
CELLS

<130> UCSD-104-PCT

<140> PCT/US05/007704

<141> 2005-03-09

<150> 60/552,318

<151> 2004-03-10

<160> 57

<170> PatentIn Ver. 3.3

<210> 1

<211> 116

<212> PRT

<213> Homo sapiens

<400> 1

Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys Lys Lys Gln Phe

1 5 10 15

Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp Ile Ile Ala Pro

20 25 30

Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys Pro Ser His Ile

35 40 45

Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser Thr Val Ile Asn

50 55 60

His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn Leu Lys Ser Cys

65 70 75 80

Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu Tyr Tyr Asp Asp

85 90 95

Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu

100 105 110

Cys Gly Cys Ser

115

<210> 2

<211> 351

<212> DNA

<213> Homo sapiens

<400> 2

ggcttggagt gtgatggcaa ggtcaacatc tgctgtaaga aacagttctt tgtcagtttc 60
aaggacatcg gctggaatga ctggatcatt gctccctctg gctatcatgc caactactgc 120
gagggtgagt gcccagagcca tatagcaggc acgtccgggt cctcactgtc cttccactca 180
acagtcatca accactaccg catgcggggc catagcccct ttgccaacct caaatcgtgc 240
tgtgtgccca ccaagctgag acctatgtcc atgtgtact atgatgatgg tcaaaacatc 300
atcaaaaagg acattcagaa catgatcgtg gaggagtgtg ggtgctcata g 351

<210> 3

<211> 426

<212> PRT

<213> Homo sapiens

<400> 3

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ala Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Ala Leu Pro Lys Asp Val Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Arg Leu Phe
165 170 175

Gln Gln Gln Lys His Pro Gln Gly Ser Leu Asp Thr Gly Glu Glu Ala
180 185 190

Glu Glu Val Gly Leu Lys Gly Glu Arg Ser Glu Leu Leu Leu Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Val Phe Pro Val Ser
210 215 220

Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Val
225 230 235 240

Arg Ile Ala Cys Glu Gln Cys Gln Glu Ser Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Gly Glu Gly Lys Lys Lys
260 265 270

Gly Gly Gly Glu Gly Gly Ala Gly Ala Asp Glu Glu Lys Glu Gln Ser
275 280 285

His Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro
290 295 300

His Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile
305 310 315 320

Cys Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn
325 330 335

Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly
340 345 350

Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe
355 360 365

His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe
370 375 380

Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser
385 390 395 400

Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln
405 410 415

Asn Met Ile Val Glu Glu Cys Gly Cys Ser
420 425

<210> 4

<211> 130

<212> PRT

<213> Homo sapiens

<400> 4

Ala Arg Gln Ser Glu Asp His Pro His Arg Arg Arg Arg Gly Leu
1 5 10 15

Glu Cys Asp Gly Lys Val Asn Ile Cys Cys Lys Lys Gln Phe Phe Val
20 25 30

Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp Ile Ile Ala Pro Ser Gly
35 40 45

Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys Pro Ser His Ile Ala Gly
50 55 60

Thr Ser Gly Ser Ser Leu Ser Phe His Ser Thr Val Ile Asn His Tyr
65 70 75 80

Arg Met Arg Gly His Ser Pro Phe Ala Asn Leu Lys Ser Cys Cys Val
85 90 95

Pro Thr Lys Leu Arg Pro Met Ser Met Leu Tyr Tyr Asp Asp Gly Gln
100 105 110

Asn Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu Cys Gly
115 120 125

Cys Ser
130

<210> 5

<211> 115

<212> PRT

<213> Homo sapiens

<400> 5

Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys Lys Lys Gln Phe
1 5 10 15

Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp Ile Ile Ala Pro
20 25 30

Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys Pro Ser His Ile
35 40 45

Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser Thr Val Ile Asn
50 55 60

His Tyr Ala Cys Gly His Ser Pro Phe Ala Asn Leu Lys Ser Cys Cys
65 70 75 80

Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu Tyr Tyr Asp Asp Gly
85 90 95

Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu Cys
100 105 110

Gly Cys Ser
115

<210> 6

<211> 426

<212> PRT

<213> Homo sapiens

<400> 6

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ala Ala

20	25	30
Pro Asp Cys Pro Ser Cys Ala Leu Ala Ala Leu Pro Lys Asp Val Pro		
35	40	45
Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn		
50	55	60
Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys		
65	70	75
80		
Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly		
85	90	95
Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu		
100	105	110
Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu		
115	120	125
Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly		
130	135	140
Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys		
145	150	155
160		
Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Arg Leu Phe		
165	170	175
Gln Gln Gln Lys His Pro Gln Gly Ser Leu Asp Thr Gly Glu Glu Ala		
180	185	190
Glu Glu Val Gly Leu Lys Gly Glu Arg Ser Glu Leu Leu Leu Ser Glu		
195	200	205
Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Val Phe Pro Val Ser		
210	215	220
Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Val		
225	230	235
240		
Arg Ile Ala Cys Glu Gln Cys Gln Glu Ser Gly Ala Ser Leu Val Leu		
245	250	255
Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Gly Glu Gly Lys Lys Lys		

260	265	270
Gly Gly Gly Glu Gly Gly Ala Gly Ala Asp Glu Glu Lys Glu Gln Ser		
275	280	285
His Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro		
290	295	300
His Arg Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile		
305	310	315 320
Cys Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn		
325	330	335
Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly		
340	345	350
Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe		
355	360	365
His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe		
370	375	380
Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser		
385	390	395 400
Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln		
405	410	415
Asn Met Ile Val Glu Glu Cys Gly Cys Ser		
420	425	

<210> 7

<211> 424

<212> PRT

<213> Mus musculus

<400> 7

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Gly Ser Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Gly Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Arg Leu Phe
165 170 175

Gln Gln Gln Lys His Pro Gln Gly Ser Leu Asp Thr Gly Asp Glu Ala
180 185 190

Glu Glu Met Gly Leu Lys Gly Glu Arg Ser Glu Leu Leu Leu Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser
210 215 220

Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Val
225 230 235 240

Arg Ile Ala Cys Glu Gln Cys Gln Glu Ser Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Val Asp Gly Asp Gly Lys Lys Lys
260 265 270

Asp Gly Ser Asp Gly Gly Leu Glu Glu Glu Lys Glu Gln Ser His Arg
275 280 285

Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro His Arg
290 295 300

Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys
305 310 315 320

Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp
325 330 335

Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys
340 345 350

Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser
355 360 365

Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn
370 375 380

Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu
385 390 395 400

Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met
405 410 415

Ile Val Glu Glu Cys Gly Cys Ser
420

<210> 8

<211> 424

<212> PRT

<213> Rattus norvegicus

<400> 8

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Gly Ala Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Gly Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Arg Leu Phe
165 170 175

Gln Gln Gln Lys His Pro Gln Gly Ser Leu Asp Met Gly Asp Glu Ala
180 185 190

Glu Glu Met Gly Leu Lys Gly Glu Arg Ser Glu Leu Leu Leu Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser
210 215 220

Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Val
225 230 235 240

Arg Ile Ala Cys Glu Gln Cys Gln Glu Ser Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Val Asp Gly Asp Gly Lys Lys Lys
260 265 270

Asp Gly Ser Asp Gly Gly Leu Glu Glu Glu Lys Glu Gln Ser His Arg
275 280 285

Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro His Arg
290 295 300

Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys
305 310 315 320

Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp
325 330 335

Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys
340 345 350

Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser
355 360 365

Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn
370 375 380

Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu
385 390 395 400

Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met
405 410 415

Ile Val Glu Glu Cys Gly Cys Ser
420

<210> 9

<211> 424

<212> PRT

<213> Gallus gallus

<400> 9

Met Pro Leu Leu Trp Lys Arg Gly Phe Leu Leu Val Ile Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ser Val
20 25 30

Ala Asp Cys Pro Ser Cys Ala Leu Thr Thr Leu Ser Lys Asp Val Pro
35 40 45

Ser Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Arg Asp Arg Pro Asn Ile Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Thr Lys Lys Leu His Val Gly Lys Val Gly
 85 90 95

Asp Asp Gly Tyr Val Glu Ile Glu Asp Asp Val Gly Arg Arg Ala Glu
 100 105 110

Met Asn Glu Val Val Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
 115 120 125

Ser Gly Thr Pro Lys Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
 130 135 140

Ser Glu Leu Ser Val Val Glu His Ala Glu Val Trp Leu Phe Leu Lys
145 150 155 160

Val Ser Lys Ala Asn Arg Ser Arg Thr Lys Val Thr Ile Arg Leu Phe
 165 170 175

Gln Gln Gln Arg Gln Pro Lys Gly Asn Ser Glu Ala Ala Glu Asp Met
 180 185 190

Glu Asp Met Gly Leu Lys Gly Glu Arg Ser Glu Thr Leu Ile Ser Glu
 195 200 205

Lys Ala Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Ile Ser
 210 215 220

Ser Ser Val Gln Arg Leu Leu Asp Gln Gly Gln Ser Ser Leu Asp Val
225 230 235 240

Arg Ile Ala Cys Asp Leu Cys Gln Glu Thr Gly Ala Ser Leu Val Leu
 245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Asp Asp Gly Glu Gly Lys Glu Lys
 260 265 270

Asp Gly Gly Glu Leu Thr Gly Glu Glu Glu Lys Glu Gln Ser His Arg
 275 280 285

Pro Phe Leu Met Met Leu Ala Arg His Ser Glu Asp Arg Gln His Arg
 290 295 300

Arg Arg Glu Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys
305 310 315 320

Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Ser Asp Trp
325 330 335

Ile Ile Ala Pro Thr Gly Tyr His Ala Asn Tyr Cys Glu Glu Glu Cys
340 345 350

Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser
355 360 365

Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn
370 375 380

Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu
385 390 395 400

Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met
405 410 415

Ile Val Glu Glu Cys Gly Cys Ser
420

<210> 10

<211> 425

<212> PRT

<213> Bos taurus

<400> 10

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ala Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Val Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Ile Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Ser Lys Val Thr Ile Arg Leu Phe
165 170 175

Gln Gln Gln Lys His Leu Gln Gly Ser Leu Asp Ala Gly Glu Glu Ala
180 185 190

Glu Glu Val Gly Leu Lys Gly Glu Lys Ser Glu Met Leu Ile Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser
210 215 220

Ser Cys Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Ile
225 230 235 240

Arg Ile Ala Cys Glu Gln Cys Gln Glu Thr Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Gly Glu Gly Lys Lys Arg
260 265 270

Asp Gly Glu Gly Gly Ala Gly Gly Asp Glu Glu Lys Glu Gln Ser His
275 280 285

Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro His
290 295 300

Arg Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys
305 310 315 320

Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp
325 330 335

Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu
340 345 350

Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His
355 360 365

Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala
370 375 380

Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met
385 390 395 400

Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn
405 410 415

Met Ile Val Glu Glu Cys Gly Cys Ser
420 425

<210> 11

<211> 426

<212> PRT

<213> Equus caballus

<400> 11

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Lys Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ala Ala
20 25 30

Pro Asn Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Val Pro
35 40 45

Asn Ala Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Ser Lys Val Thr Ile Arg Leu Leu
165 170 175

Gln Gln Gln Lys His Pro Gln Gly Ser Ser Asp Thr Arg Glu Glu Ala
180 185 190

Glu Glu Ala Asp Leu Met Glu Glu Arg Ser Glu Gln Leu Ile Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser
210 215 220

Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Ile
225 230 235 240

Arg Ile Ala Cys Asp Gln Cys His Glu Thr Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Gly Glu Gly Lys Lys Lys
260 265 270

Asp Gly Gly Glu Ala Gly Ala Gly Val Asp Glu Glu Lys Glu Gln Ser
275 280 285

His Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro
290 295 300

His Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile
305 310 315 320

Cys Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn
325 330 335

Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly
340 345 350

Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe
355 360 365

His Ser Thr Val Ile Asn Gln Tyr Arg Leu Arg Gly His Asn Pro Phe
370 375 380

Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser
385 390 395 400

Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln
405 410 415

Asn Met Ile Val Glu Glu Cys Gly Cys Ser
420 425

<210> 12

<211> 424

<212> PRT

<213> Sus scrofa

<400> 12

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Gly Gly His Ser Ala Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Val Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Leu Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ala Gly Thr Ala Arg Lys Thr Leu Arg Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Ile Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Ser Ile Arg Leu Phe
165 170 175

Gln Gln Gln Arg Arg Pro Gln Gly Ser Ala Asp Ala Gly Glu Glu Ala
180 185 190

Glu Asp Val Gly Phe Pro Glu Glu Lys Ser Glu Val Leu Ile Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser
210 215 220

Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ala Leu Asp Ile
225 230 235 240

Arg Thr Ala Cys Glu Gln Cys His Glu Thr Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Ala Glu Gly Arg Lys Arg
260 265 270

Asp Gly Glu Gly Ala Gly Val Asp Glu Glu Lys Glu Gln Ser His Arg
275 280 285

Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Glu His Pro His Arg
290 295 300

Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys
305 310 315 320

Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp
325 330 335

Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys
340 345 350

Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser
355 360 365

Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn
370 375 380

Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu
385 390 395 400

Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met
405 410 415

Ile Val Glu Glu Cys Gly Cys Ser
420

<210> 13

<211> 425

<212> PRT

<213> Ovis aries

<400> 13

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ala Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Val Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Gln Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Ile Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Ser Lys Val Thr Ile Arg Leu Phe
165 170 175

Gln Gln Gln Lys His Leu Gln Gly Ser Leu Asp Ala Gly Glu Glu Ala
180 185 190

Glu Glu Val Gly Leu Lys Gly Glu Lys Ser Glu Met Leu Ile Ser Glu
195 200 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser
210 215 220

Ser Cys Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Ile
225 230 235 240

Arg Ile Ala Cys Glu Gln Cys Gln Glu Thr Gly Ala Ser Leu Val Leu
245 250 255

Leu Gly Lys Lys Lys Arg Lys Glu Glu Glu Gly Glu Gly Lys Lys Arg
260 265 270

Asp Gly Glu Gly Gly Ala Gly Gly Asp Glu Glu Lys Glu Gln Ser His
275 280 285

Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro His
290 295 300

Arg Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys
305 310 315 320

Cys Lys Lys Gln Phe Tyr Val Ser Phe Lys Asp Ile Gly Trp Asn Asp
325 330 335

Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu
340 345 350

Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His
355 360 365

Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala
370 375 380

Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met
385 390 395 400

Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn
405 410 415

Met Ile Val Glu Glu Cys Gly Cys Ser
420 425

<210> 14

<211> 424

<212> PRT

<213> Felis catus

<400> 14

Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1 5 10 15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly Pro Gly Ala Ala
20 25 30

Pro Asp Cys Pro Ser Cys Ala Leu Ala Thr Leu Pro Lys Asp Val Pro
35 40 45

Asn Ser Gln Pro Glu Met Val Glu Ala Val Lys Lys His Ile Leu Asn
50 55 60

Met Leu His Leu Lys Lys Arg Pro Glu Val Thr Gln Pro Val Pro Lys
65 70 75 80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
85 90 95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
100 105 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
115 120 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
130 135 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys
145 150 155 160

Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Gln Leu Leu
 165 170 175

Gln Lys Gln Pro Gln Gly Gly Val Asp Ala Gly Glu Glu Ala Glu Glu
 180 185 190

Met Gly Leu Met Glu Glu Arg Asn Glu Val Leu Ile Ser Glu Lys Val
 195 200 205

Val Asp Ala Arg Lys Ser Thr Trp His Ile Phe Pro Val Ser Ser Ser
 210 215 220

Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Val Arg Ile
225 230 235 240

Ala Cys Glu Gln Cys His Glu Thr Gly Ala Ser Leu Val Leu Leu Gly
 245 250 255

Lys Lys Lys Lys Lys Glu Glu Gly Glu Gly Lys Lys Lys Asp Gly
 260 265 270

Gly Asp Gly Gly Ala Gly Ala Asp Glu Asp Lys Glu Gln Ser His Arg
 275 280 285

Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro His Arg
 290 295 300

Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys
305 310 315 320

Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp
 325 330 335

Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys
 340 345 350

Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser
 355 360 365

Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn
 370 375 380

Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu
385 390 395 400

Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met
405 410 415

Ile Val Glu Glu Cys Gly Cys Ser
420

<210> 15

<211> 395

<212> PRT

<213> Danio rerio

<400> 15

Met Ser Pro Leu Pro Leu Leu Ser Gly Ile Leu Leu Leu Leu Ile Arg
1 5 10 15

Ser Cys Ser Leu Ser Ala Met Val Thr Lys Gly Ser Leu Pro Met Ser
20 25 30

Glu Gln Gln Ala Gly Ala Thr Val Cys Pro Ser Cys Ala Leu Ala Arg
35 40 45

Phe Arg Lys Gly Val Ser Glu Ser Glu Asp Glu Gly Ala Gln Gln Asp
50 55 60

Val Val Glu Ala Val Lys Arg His Ile Leu Asn Met Leu His Leu Gln
65 70 75 80

Glu Arg Pro Asn Ile Thr His Pro Val Pro Arg Ala Ala Leu Leu Asn
85 90 95

Ala Ile Arg Lys Val His Val Gly Arg Val Ala Lys Asp Gly Ser Val
100 105 110

Leu Ile Glu Asp Glu Ala Ser Asn Arg Ala Glu Thr Glu Gln Ala Glu
115 120 125

Gln Thr Glu Ile Ile Thr Phe Ala Glu Thr Gly Glu Ala Pro Gly Ile
130 135 140

Val Asn Phe Leu Ile Ser Lys Glu Gly Gly Glu Met Ser Val Val Asp
145 150 155 160

Gln Ala Asn Val Trp Ile Phe Leu Arg Leu Pro Lys Gly Asn Arg Thr
165 170 175

Arg Ala Asn Val Asn Ile Arg Leu Leu Leu Gln Gln Gly Ala Gly Glu
180 185 190

Lys Ile Leu Ala Glu Lys Ser Val Asp Thr Arg Arg Ser Gly Trp His
195 200 205

Thr Phe Pro Ala Ser Glu Ser Val Gln Ser Leu Leu Gln Arg Gly Gly
210 215 220

Ser Thr Leu Ser Leu Arg Val Ser Cys Pro Leu Cys Ala Asp Ala Arg
225 230 235 240

Ala Thr Pro Val Leu Val Ser Pro Gly Gly Ser Glu Arg Glu Gln Ser
245 250 255

His Arg Pro Phe Leu Met Ala Val Val Arg Gln Met Asp Glu Leu Ser
260 265 270

Leu Arg Arg Arg Arg Lys Arg Gly Leu Glu Cys Asp Gly Lys Ala Arg
275 280 285

Val Cys Cys Lys Arg Gln Phe Tyr Val Asn Phe Lys Asp Ile Gly Trp
290 295 300

Asn Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu
305 310 315 320

Gly Asp Cys Ala Ser Asn Val Ala Ser Ile Thr Gly Asn Ser Leu Ser
325 330 335

Phe His Ser Thr Val Ile Ser His Tyr Arg Ile Arg Gly Tyr Ser Pro
340 345 350

Phe Thr Asn Ile Lys Ser Cys Cys Val Pro Thr Arg Leu Arg Ala Met
355 360 365

Ser Met Leu Tyr Tyr Asn Glu Glu Gln Lys Ile Val Lys Lys Asp Ile
370 375 380

Gln Asn Met Ile Val Glu Glu Cys Gly Cys Ser
385 390 395

<210> 16

<211> 404

<212> PRT

<213> *Carassius auratus*

<400> 16

Met Ser Ser Leu Thr Leu Val Asn Arg Gly Thr Ala Ala Leu Arg Leu
1 5 10 15

Phe Val Arg Gly Leu Leu Thr His Ser Ser Arg Glu Trp Leu Ser Gly
20 25 30

Asp Gly Glu Pro Asp Asp Pro Val Thr Pro Cys Pro Ser Cys Ala Leu
35 40 45

Ala Gln Arg Gln Lys Asp Ser Glu Glu Gln Thr Asp Met Val Glu Ala
50 55 60

Val Lys Arg His Ile Leu Asn Met Leu His Leu Asn Thr Arg Pro Asn
65 70 75 80

Val Thr His Pro Val Pro Arg Ala Ala Leu Leu Asn Ala Ile Arg Arg
85 90 95

Leu His Val Gly Arg Val Gly Glu Asp Gly Thr Val Glu Met Glu Glu
100 105 110

Asp Gly Gly Gly Leu Gly Glu His Arg Glu Gln Ser Glu Glu Gln Pro
115 120 125

Phe Glu Ile Ile Thr Phe Ala Glu Pro Gly Asp Ala Pro Asp Ile Met
130 135 140

Lys Phe Asp Ile Ser Met Glu Gly Asn Thr Leu Ser Val Val Glu Gln
145 150 155 160

Ala Asn Val Trp Leu Leu Leu Lys Val Ala Lys Gly Ser Arg Gly Lys
165 170 175

Gly Lys Val Ser Val Gln Leu Leu Gln His Gly Lys Ala Asp Pro Gly
180 185 190

Ser Ala Asp Gly Pro Gln Glu Ala Val Val Ser Glu Lys Thr Val Asp
195 200 205

Thr Arg Arg Ser Gly Trp His Thr Leu Pro Val Ser Arg Thr Val Gln
210 215 220

Thr Leu Leu Asp Gly Asp Ser Ser Met Leu Ser Leu Arg Val Ser Cys
225 230 235 240

Pro Met Cys Ala Glu Ala Gly Ala Val Pro Ile Leu Val Pro Thr Glu
245 250 255

Ser Asn Lys Gly Lys Glu Arg Glu Gln Ser His Arg Pro Phe Leu Met
260 265 270

Val Val Leu Lys Pro Ala Glu Glu His Pro His Arg Arg Ser Lys Arg
275 280 285

Gly Leu Glu Cys Asp Gly Lys Ile Arg Val Cys Cys Lys Arg Gln Phe
290 295 300

Tyr Val Asn Phe Lys Asp Ile Gly Trp Ser Asp Trp Ile Ile Ala Pro
305 310 315 320

Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Asp Cys Pro Ser His Val
325 330 335

Ala Ser Ile Thr Gly Ser Ala Leu Ser Phe His Ser Thr Val Ile Asn
340 345 350

His Tyr Arg Met Arg Gly Tyr Ser Pro Phe Asn Asn Ile Lys Ser Cys
355 360 365

Cys Val Pro Thr Arg Leu Arg Ala Met Ser Met Leu Tyr Tyr Asn Glu
370 375 380

Glu Gln Lys Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu
385 390 395 400

Cys Gly Cys Ser

<210> 17

<211> 164

<212> PRT

<213> Homo sapiens

<400> 17

Met Cys Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys
1 5 10 15

Ser Ser Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly
20 25 30

Asp Ile Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg
35 40 45

Ile Asp Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Asn
50 55 60

Tyr Asn Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile
65 70 75 80

Lys Gly Val Glu Ser Glu Phe Tyr Leu Ala Met Asn Lys Glu Gly Lys
85 90 95

Leu Tyr Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu
100 105 110

Ile Leu Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His
115 120 125

Asn Gly Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val
130 135 140

Arg Gly Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro
145 150 155 160

Met Ala Ile Thr

<210> 18

<211> 194

<212> PRT

<213> Homo sapiens

<400> 18

Met His Lys Trp Ile Leu Thr Trp Ile Leu Pro Thr Leu Leu Tyr Arg
1 5 10 15

Ser Cys Phe His Ile Ile Cys Leu Val Gly Thr Ile Ser Leu Ala Cys

20	25	30
Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys Ser Ser		
35	40	45
Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile		
50	55	60
Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp		
65	70	75
		80
Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Asn Tyr Asn		
85	90	95
Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly		
100	105	110
Val Glu Ser Glu Phe Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr		
115	120	125
Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu		
130	135	140
Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Asn Gly		
145	150	155
		160
Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val Arg Gly		
165	170	175
Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala		
180	185	190

Ile Thr

<210> 19

<211> 194

<212> PRT

<213> Mus musculus

<400> 19

Met Arg Lys Trp Ile Leu Thr Arg Ile Leu Pro Thr Leu Leu Tyr Arg
1 5 10 15

Ser Cys Phe His Leu Val Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
20 25 30

Asn Asp Met Ser Pro Glu Gln Thr Ala Thr Ser Val Asn Cys Ser Ser
35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp
65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn
85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr
115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly
145 150 155 160

Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val Lys Gly
165 170 175

Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala
180 185 190

Ile Thr

<210> 20

<211> 194

<212> PRT

<213> Canis familiaris

<400> 20

Met Arg Lys Trp Ile Leu Thr Trp Ile Leu Pro Thr Leu Leu Tyr Arg
1 5 10 15

Ser Cys Phe His Ile Ile Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
20 25 30

Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys Ser Ser
35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp
65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn
85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr
115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly
145 150 155 160

Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Val Pro Val Arg Gly
165 170 175

Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala
180 185 190

Ile Thr

<210> 21

<211> 194

<212> PRT

<213> Sus scrofa

<400> 21

Met Arg Lys Trp Ile Leu Thr Trp Ile Leu Pro Ser Leu Leu His Arg
1 5 10 15

Ser Cys Phe His Ile Ile Cys Leu Val Gly Thr Leu Ser Leu Asp Cys
20 25 30

Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys Ser Ser
35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Pro Arg Ile Gly
65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Asn Tyr Asn
85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Val Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr
115 120 125

Ala Lys Lys Glu Tyr Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly
145 150 155 160

Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Val Pro Val Arg Gly
165 170 175

Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala
180 185 190

Ile Thr

<210> 22

<211> 194

<212> PRT

<213> Rattus norvegicus

<400> 22

Met Arg Lys Trp Ile Leu Thr Arg Ile Leu Pro Thr Pro Leu Tyr Arg
1 5 10 15

Pro Cys Phe His Leu Val Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
20 25 30

Asn Asp Met Ser Pro Glu Gln Thr Ala Thr Ser Val Asn Cys Ser Ser
35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp
65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Arg Asn Ser Tyr Asn
85 90 95

Ile Met Glu Ile Met Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Gln Gly Glu Leu Tyr
115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
130 135 140

Glu Asn His Tyr Asn Thr Ser Ala Ser Ala Lys Trp Thr His Ser Gly
145 150 155 160

Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Leu Pro Val Lys Gly
165 170 175

Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala
180 185 190

Ile Thr

<210> 23

<211> 194

<212> PRT

<213> Ovis aries

<400> 23

Met Arg Lys Trp Ile Leu Thr Trp Ile Leu Pro Thr Leu Leu Tyr Arg
1 5 10 15

Ser Cys Phe His Ile Ile Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
20 25 30

Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys Ser Ser
35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp
65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn
85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr
115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly
145 150 155 160

Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Val Pro Val Arg Gly
165 170 175

Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala
180 185 190

Ile Thr

<210> 24

<211> 186

<212> PRT

<213> Mustela vison

<400> 24

Met Arg Lys Trp Ile Leu Thr Trp Ile Leu Pro Thr Leu Leu Tyr Arg
1 5 10 15

Ser Cys Phe His Ile Ile Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
20 25 30

Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys Ser Ser
35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp
65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn
85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr
115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly
145 150 155 160

Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Val Pro Val Arg Gly
165 170 175

Lys Lys Thr Lys Lys Glu Gln Lys Gln Pro
180 185

<210> 25

<211> 1200

<212> DNA

<213> Homo sapiens

<400> 25

acgcgtcac acacagagag aaaatccttc tgcctgttga ttatggaaa caattatgat 60
tctgctggag aacttttcag ctgagaaata gttgttagct acagtagaaa ggctcaagtt 120
gcaccaggca gacaacagac atggaattct tatatatcca gctgttagca acaaaacaaa 180
agtcaaatag caaacagcgt cacagcaact gaacttacta cgaactgttt ttatgaggat 240
ttatcaacag agttatttaa ggaggaatcc tgtgttgta tcaggaacta aaaggataag 300

gctaacaatt tggaaagagc aagtactctt tcttaaatca atctacaatt cacagatagg 360
 aagagggtcaa tgacctagga gtaacaatca actcaagatt cattttcatt atgttattca 420
 tgaacacccg gagcactaca ctataatgca caaatggata ctgacatgga tcttgccaac 480
 ttgtctctac agatcatgct ttcacattat ctgtctagt ggtactatat ctttagcttg 540
 caatgacatg actccagagc aaatggctac aaatgtgaac tgttccagcc ctgagcgaca 600
 cacaagaagt tatgattaca tggaggagg ggatataaga gtgagaagac tcttctgtcg 660
 aacacagtgg tacctgagga tcgataaaaaggaggcaagta aaagggaccc aagagatgaa 720
 gaataattac aatatcatgg aaatcaggac agtggcagtt ggaattgtgg caatcaaagg 780
 ggtggaaagt gaattctatc ttgcaatgaa caaggaagga aaactctatg caaagaaaga 840
 atgcaatgaa gattgtaact tcaaagaact aattctggaa aaccattaca acacatatgc 900
 atcagctaaa tggacacaca acggaggggga aatgtttgtt gccttaaatc aaaaggggat 960
 tctgtgaaga ggaaaaaaa cgaagaaaga acaaaaaaca gccacttctc ttcctatggc 1020
 aataacttaa ttgcatatgg tatataaaga acccagttcc agcaggggaga ttctttaag 1080
 tggactgttt tctttctct caaaatttct tttctttta ttttttagta atcaagaaag 1140
 gctggaaaaa ctactgaaaa actgatcaag ctggacttgt gcatttatgt ttgtttaag 1200

<210> 26

<211> 585

<212> DNA

<213> Mus musculus

<400> 26

atgcgcaaat ggatactgac acggatcctg ccaactctgc tctacagatc atgcttcac 60
 ctctctgtc tagtgggcac tatactcta gcttgcaatg acatgagtcc ggagcaaacg 120
 gctacgagtg tgaactgttc cagccccgag cgacacacca gaagtatga ctacatggaa 180
 ggaggggata taagggtgag aagactgttc tgtcgacccc agtggtagct gaggattgac 240
 aaacgaggca aagtgaagg gaccaggag atgaagaaca gctacaacat catggaaatc 300
 aggaccgtgg cagttggaat tgtggcaatc aaagggttgg aaagtgaata ctatctgcc 360
 atgaacaagg aagggaact ctatgcaaag aaagaatgca atgaggattg caactcaaa 420
 gaactgattc tggaaaacca ttataacacc tatgcatcag ctaaatggac acacagcgga 480
 ggggaaatgt tctgtcctt aaatcaaaag gggattcctg tcaaaggga gaaaacgaag 540
 aaagaacaaa aaacagccca ttttctct atggcaataa cctaa 585

<210> 27

<211> 686

<212> DNA

<213> Canis familiaris

<400> 27

agagggtcaat gaccaggag caacaatcaa ctcaagattt aattttcatt atgttattca 60
 tgaacacccg gagcactaca ctataatgcg caaatggata ctgacatgga tcttgccaac 120
 ttgtctctac agatcatgct ttcacattat ctgtctagt ggcactatat ctttagcttg 180
 caatgacatg actccagagc aaatggctac aaatgtgaac tgttccagcc ctgagcgaca 240

tacaagaagt tatgattaca tggaaggagg g gatataaga gtgagaagac ttttctgtcg 300
aacacagtgg tatctgagga ttgataaacg aggcaaagtc aaagggaccc aagagatgaa 360
gaacagttac aatatcatgg aaatcaggac agtggcagtt ggaatagtgg caatcaaagg 420
ggtggaaagt gaattatttc ttgcaatgaa taaggaagga aagctctatg caaagaaaga 480
atgcaatgaa gattgcaact tcaaagaatt aattctggaa aaccattaca acacatatgc 540
atcagctaaa tggacacaca gcggaggaga aatgtttgtt gctttaaate aaaagggggg 600
tcctgtaagg gggaaaaaaaa cgaagaaaga acaaaaaaca gcccaacttc ttctatggc 660
aataacataa tcatatatgg tatata 686

<210> 28
<211> 690
<212> DNA
<213> Sus scrofa

<400> 28
aatctacaat tcacagatag gaagagggtca gtgacctagg agcaacgatc aactcaagat 60
ttatttcat tatgttattc atgaacaccc ggagcactat actataatgc gcaaatggat 120
actgacatgg atcctgccaa gtttgcctca cagatcatgc ttccacatta tctgtctggt 180
gggcacttta tctttggatt gcaatgacat gactccagag caaatggcta caaatgtgaa 240
ctgtccagc cctgagcgac atacaagaag ttatgattac atggaaggag gggatataag 300
agtgagaaga ctctctgtc gaacacagtg gtatccgagg attggcaaac gaggcaaagt 360
caaagggact caagagatga agaacaatta caacatcatg gaaatcagga cagtggctgt 420
tggaattgta gcaatcaaag gagtggtaag tgaatattat cttgcaatga acaaggaagg 480
aaaactctat gcaaagaaag aatacaatga agattgtaac ttcaaagaat taattctgga 540
aaaccattac aacacgtatg catcagctaa atggacacac agtggaggag aaatgtttgt 600
tgccttaaat caaaaggggg ttctgtaag agggaaaaaa accaagaaag acaaaaaaac 660
agcccacttt ctctctatgg caataactaa 690

<210> 29
<211> 693
<212> DNA
<213> Rattus norvegicus

<400> 29
caatctacaa ttacagata ggaggaggcc catgacctag gagtagcgat caactcaagg 60
tcagttctc attatgttat tcattggacac ccggggcact gctctataat gcgcaaatgg 120
atactgacac ggaactctgc gactccgctc tacagaccgt gctccacct cgtctgtctt 180
gtgggcacca tatctttagc ttgcaatgac atgagtccag agcagacggc cagcagcgtg 240
aactgttcta gccccgagcg acacacgaga agttatgact acatggaagg aggggatata 300
agggtgagga gactgttctg tcgcaccagc tggtaacctga ggattgacaa acgaggcaaa 360
tgaaaggga cccaggagat gaggaacagc tacaacatca tggaaatcat gactgtggca 420
gttggaattg tggcaatcaa aggggtggaa agtgaatact atcttgccat gaacaacaa 480
ggggaactct atgcaaagaa agaatgcaat gaggattgca acttcaaaga actgattctg 540

gaaaaccatt acaacacctc tgcacagct aatggacac acagcggagg ggaaatgttc 600
gtggccttaa atcaaaaggg gcttcctgtc aaaggaaga aaacgaaga agaacaaaa 660
acggcccact ttctctat ggcaataact taa 693

<210> 30
<211> 622
<212> DNA
<213> *Ovis aries*

<400> 30
ttatgttatt catgaacacc cggagcacta tactataatg cgcaaatgga tactgacatg 60
gatcctgcc agtttgctct acagatcatg ctccacatt atctgtctag tgggcactat 120
atctttagct tgcaatgaca tgactccaga gcaaatggct acaaatgtga actgttccag 180
ccccgagcga catacaaga gttatgatta catggaagga ggagatataa gagtgagaag 240
actctctgt cgaacacagt ggtatctgag gattgataaa cgaggcaaag tcaaaggac 300
tcaagagatg aagaataatt aacacatcat ggaatcagg acagtggctg ttggaattgt 360
agcaatcaaa ggagtggaaa gtgaatatta ccttgcaatg aacaaggaag gaaaactcta 420
tgcaaaagaa gaatgtaacg aagactgcaa ctcaaagaa ttaattctgg aaaatcatta 480
caacacatat gcatcagcta aatggacaca cagtggagga gaaatgttg ttgccttaa 540
ttcaaaagg gttccagtaa gaggaagaa aacgaagaa gaacaaaaaa cagcccactt 600
ttctctatg gcaataactt aa 622

<210> 31
<211> 558
<212> DNA
<213> *Mustela vison*

<400> 31
atgcgcaat ggatactgac atggatcctg ccaactttgc tctacagatc atgtttcac 60
attatctgtc tagtgggcac tatatcttta gcttgcaatg acatgactcc agagcaaatg 120
gctacaaatg tgaactgttc cagccctgag cgacatacaa gaagtatatga ttacatggaa 180
ggaggggata taagagttag aagactcttc tctgaacac agtggtatct gaggattgat 240
aaacgaggca aggtcaaagg aaccaagag atgaagaaca gttacaatat catggaaatc 300
aggacagtgg cagttggaat tgtggcaatc aaaggggtgg aaagtgaata ttatctgca 360
atgaataagg aaggaaaact ctatgcaaag aaagaatgca atgaagattg caacttcaa 420
gaattaatc tggaaaacca ttacaacaca tatgcatcag cttaatggac acacagcgga 480
ggagaaatgt ttgttgctt aaatcaaaag ggggttctg taagggggaa aaaaacgaag 540
aaagaacaaa aacagccc 558

<210> 32
<211> 1633
<212> DNA

<213> Homo sapiens

<400> 32

tgctccctga cagccacaaa cctacagcac tgactgcatt cagagaggaa cctgcaaaca 60
aaacttcaca gaaaactttt tgttctgtt ccagagaatt tgctgaagag gagaaggaaa 120
aaaaaaacac caaaaaaaaa aataaaaaaa tccacacaca caaaaaacct gcgcgtgagg 180
ggggaggaaa agcagggcct ttaaaaagg caatcacaaac aacttttct gccaggatgc 240
ccttgctttg gctgagagga ttctgttgg caagttgctg gattatagtg aggagttccc 300
ccaccccagg atccgagggg cacagcgagg ccccgactg tccgtcctgt gcgcgtggccg 360
ccctcccaaa ggatgtacc aactctcagc cagagatggg ggaggccgtc aagaagcaca 420
tttaaacaat gctgcacttg aagaagagac ccgatgtcac ccagccggtg cccaaggcgg 480
cgcttctgaa cgcgatcaga aagcttcatg tgggcaaagt cggggagaaac gggatatgtg 540
agatagagga tgacattgga aggagggcag aaatgaatga acttatggag cagacctcgg 600
agatcatcac gtttgcgag tcaggaacag ccaggaagac gctgcacttc gagatttcca 660
aggaaggcag tgacctgtca gtggtggagc gtgcagaagt ctggctcttc ctaaaagtcc 720
ccaaggccaa caggaccagg accaaagtca ccatccgcct ctccagcag cagaagcacc 780
cgcagggcag ctggacaca ggggaagagg ccgaggaagt gggcttaaag ggggagagga 840
gtgaactgtt gctctctgaa aaagtagtag acgctcggaa gagcacctgg catgtcttc 900
ctgtctccag cagcatccag cggttgctgg accagggcaa gagctccctg gacgttcgga 960
ttgcctgtga gcagtgccag gagagtggcg ccagcttggg tctcctgggc aagaagaaga 1020
agaaagaaga ggagggggaa gggaaaaaga agggcggagg tgaagggtgg gcaggagcag 1080
atgaggaaaa ggagcagtcg cacagacctt tcctcatgct gcaggcccgg cagtctgaag 1140
accacctca tcgccggcgt cggcggggct tggagtgtga tggcaaggtc aacatctgct 1200
gtaagaaaca gttcttctc agtttcaagg acatcggctg gaatgactgg atcattgctc 1260
cctctggcta tcatccaac tactgcgagg gtgagtgcc gagccatata gcaggcacgt 1320
ccgggtctc actgtcttc cactcaacag tcatcaacca ctaccgatg cggggccata 1380
gccccttgc caacctcaa tcgtctgtg tggccacaa gctgagacct atgtccatgt 1440
tgtactatga tgatggtcaa aacatcatca aaaaggacat tcagaacatg atcgtggagg 1500
agtgtgggtg ctcatagagt tggccagccc agggggaaag ggagcaagag ttgtccagag 1560
aagacagtgg caaatgaag aaattttta ggtttctgag ttaaccagaa aaatagaaat 1620
taaaaacaaa aca 1633

<210> 33

<211> 425

<212> DNA

<213> Homo sapiens

<400> 33

gcccggcagt ctgaagacca cctcatcgc cggcgtcggc ggggcttggg gtgtgatggc 60
aaggtaaca tctgctgtaa gaaacagttc ttgtcagtt tcaaggacat cggctggaat 120
gactggatca ttgtccctc tggctatcat gccaactact gcgagggtga gtgcccagac 180
catatagcag gcacgtccgg gtctcactg tcctccact caacagtcac caaccactac 240
cgcatgcggg gccatagccc ctttgccaac ctcaaactgt gctgtgtgcc caccaagctg 300
agacctatgt ccatgttgta ctatgatgat ggtcaaaaca tcatcaaaaa ggacattcag 360

aacatgatcg tggaggagtg tgggtgctca tagagttgcc cagcccaggg ggaaaggag 420
caaga 425

<210> 34

<211> 348

<212> DNA

<213> Homo sapiens

<400> 34

ggcctggagt gcgacggcaa ggtcaacatc tgctgtaaga aacagttctt tgcagtttc 60
aaggacatcg gctggaatga ctggatcatt gctccctctg gctatcatgc caactactgc 120
gagggtgagt gcccagacca tatagcaggc acgtccgggt cctcactgtc ctccactca 180
acagtcatca accactacgc atgcggccat agcccctttg ccaacctcaa atcgtgctgt 240
gtgcccacca agctgagacc catgtccatg ttgtactatg atgatggta aaacatcatc 300
aaaaaggaca ttcagaacat gatcgtggag gagtgcgggt gctcctaa 348

<210> 35

<211> 1840

<212> DNA

<213> Homo sapiens

<400> 35

tccacacaca caaaaaacct gcgcgtgagg ggggaggaaa agcagggcct taaaaaggc 60
aatcacaaca acttttctg ccaggatgcc ctgtcttgg ctgagaggat ttctgttggc 120
aagttgctgg attatagtga ggagttcccc caccacagga tccgaggggc acagcgcggc 180
ccccactgt cgtcctgtg cgctggccgc cctcccaaag gatgtacca actctcagc 240
agagatggtg gaggccgtca agaagcacat tttaaacatg ctgcactga agaagagacc 300
cgatgtacc cagccgttac ccaaggcggc gcttctgaac gcgatcagaa agcttcatgt 360
gggcaaagtc ggggagaacg ggtatgtgga gatagaggat gacattggaa ggagggcaga 420
aatgaatgaa cttatggagc agacctgga gatcatcacg ttgccgagt caggaacagc 480
caggaagacg ctgcactcg agatttcaa ggaaggcagt gacctgtcag tgggtggagcg 540
tgcagaagtc tggctcttcc taaaagtccc caaggccaac aggaccagga ccaaagtcac 600
catccgctc ttccagcagc agaagcacc gcagggcagc ttggacacag gggaagaggc 660
cgaggaagtg ggcttaaagg gggagaggag tgaactgtg ctctctgaaa aagtagtaga 720
cgctcggaag agcacctggc atgtcttccc tgtctccagc agcatccagc ggttgctgga 780
ccagggaag agctccctgg acgttcggat tgcctgtgag cagtgccagg agagtggcgc 840
cagcttggtt ctctgggca agaagaagaa gaaagaagag gagggggaag ggaaaaagaa 900
ggcgaggagt gaaggtgggg caggagcaga tgaggaaaag gagcagtcgc acagacctt 960
cctcatgctg caggcccggc agtctgaaga ccacctcat cgccggcgtc ggcggggctt 1020
ggagtgtgat ggcaaggta acatctgtg taagaaacag ttcttgtca gttcaagga 1080
catcggtgg aatgactgga tcattgtcc ctctggctat catgccaaact actgcgaggg 1140
tgagtcccc agccatatag caggcacgtc cgggtcctca ctgtcctcc actcaacagt 1200
catcaaccac taccgcatgc ggggccaatg ccccttggc aacctcaaat cgtgctgtgt 1260

gccaccaag ctgagacca tgtccatgt gtactatgat gatggtcaaa acatcatcaa 1320
 aaaggacatt cagaacatga tcgtggagga gtgtgggtgc tcatagagtt gccagccca 1380
 gggggaaagg gagcaagagt tgtccagaga agacagtggc aaaatgaaga aatttttaag 1440
 gtttctgagt taaccagaaa aatagaaatt aaaaacaaaa caaaacaaaa aaaaaaacia 1500
 aaaaaaacia aagtaaatta aaaacaaacc tgatgaaca gatgaacag atgaaggaag 1560
 atgtggaaat ctagcctgc ctagccagg gctcagagat gaagcagtga agagacagat 1620
 tgggagggaa agggagaatg gtgtaccctt tatttcttct gaaatcacac tgatgacatc 1680
 agttgttaa acgggggtatt gtcctttccc cccttgaggt tccctgtga gcttgaatca 1740
 accaatctga tctgcagtag tgtggactag aacaacccaa atagcatcta gaaagccatg 1800
 agttgaaag ggcccatcac aggcacttc ctagccta 1840

<210> 36

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 36

cgcaccactg gcattgtcat 20

<210> 37

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 37

ttctccttga tgtcacgcac 20

<210> 38

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

primer

<400> 38

gagcaaaacc cggaggagt

19

<210> 39

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 39

ttctcttcg ggcctgcac

19

<210> 40

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 40

gcttgccttg cttgaagca

20

<210> 41

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 41

ttcttgactg ggacctgtgc

20

<210> 42
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 42
cttgaagaag agacccgat 19

<210> 43
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 43
cttctgcacg ctccactac 19

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 44
gagactatca ctgctcagga 20

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 45

gataagccct tgcaaagcgt 20

<210> 46

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 46

caaccaccgc tggaagtac 19

<210> 47

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 47

ccgctatgaa ctgggtctc 19

<210> 48

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 48

agaacctgtc acaagctgtg 20

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 49
gacagcaagc tgaggatgctc 20

<210> 50
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 50
cacgtgtgag acagatggg 19

<210> 51
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 51
ggcggttgtg atagacacg 19

<210> 52
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 52

gggagctgct gcaaagttg 19

<210> 53

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 53

ccacatcaac actggtgcc 19

<210> 54

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 54

caccatcgag ctctgaag 19

<210> 55

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 55

gagcccttgt catggaagg 19

<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 56
cagctcccat ttcacagca 20

<210> 57
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 57
cgacatccct gcgttcttg 19